

REMARKS

Amendments to the Claims

Upon entry of the present amendments, claims 8, 11, 14 and 19-33 are pending. Claim 8 has been amended to substitute the term, "orientations," for the term, "axes." The intended scope of the claim remains the same, though it is believed that "orientations" (*e.g.*, a pair of orthogonally oriented tensile forces) more clearly captures the nature of the tensions applied across the stencil by the pairs of mounting members. The present amendment does not introduce new matter.

Each of the issues raised in the Office Action is addressed, below, under an appropriate subheading.

Terminal Disclaimer

The Examiner noted that the terminal disclaimer filed on July 9, 2001, was signed by the undersigned attorney, who was not then established as being authorized to act on behalf of the assignee. The undersigned attorney is filing herewith an Associate Power of Attorney granting power of attorney to the undersigned to remedy this oversight.

35 U.S.C. §103(a)

Claims 8, 11, 14 and 19-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 4,442,772 (henceforth referred to as "Bubley") in view of GB 2,264,460 and U.S. Patent 5,044,306 (henceforth referred to as "Erdmann"). The remaining claims (*i.e.*, claims 24-33) were rejected under 35 U.S.C. §103(a) as being unpatentable over GB 2,262,460 in view of Erdmann.

Each of the pending claims (*i.e.*, claims 8, 11, 14 and 19-33) is directed to a stencil or a more-inclusive apparatus including a stencil, wherein the stencil has receiving apertures along four peripheral edges. The apertures along the four edges can be engaged by projections on the mounting members described in claim 8 to tension the stencil along two orientations.

Of the cited references, only GB 2,264,460 discloses a stencil that has receiving apertures by which the stencil can be mounted and tensioned. However, GB 2,264,460 does not disclose a stencil with apertures along **four** peripheral edges. Moreover, GB 2,264,460 does not disclose or suggest the advantage of tensioning the stencil along two orientations via apertures on two opposed pairs of peripheral edges. Further, GB 2,264,460 does not disclose or suggest an apparatus with **two or more** pairs of opposed mounting members for engaging the apertures along the four peripheral edges of the stencil, as specified in claim 8.

A determination of obviousness based on a combination of references requires “actual evidence” of a suggestion, teaching or motivation to combine the teachings of the references. *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Neither Bublely nor Erdmann suggest, teach or motivate the combination of their teachings with those of GB 2,264,460 to produce a stencil having apertures along four peripheral edges.

Erdmann discloses a conventional type of stencil, wherein the stencil is permanently mounted to a frame. As illustrated in Erdmann’s FIG. 1, the stencil (S) is mounted within a frame (6) via a polyester border (8). The frame (6), border (8) and stencil (S) form a stand-alone structure. Erdmann fails to describe any motivation for tensioning the stencil (S) along four edges. In fact, in the embodiment illustrated in FIG. 1, it appears that coupling of the stencil (S) to the frame (6) along all four stencil edges simply follows from the fact that the frame (6) surrounds all four sides of the stencil (S) in forming the stand-alone mounted structure (if one assumes the presence of another un-shown arm of the frame to form a four-sided structure). In contrast to the permanently mounted stencils of Erdmann, the stencils described in Applicant’s pending claims eliminate the need to provide a new frame for each stencil.

The stencil of GB 2,264,460 also is readily differentiated from the embodiment of Erdmann in that the stencil is not fixedly mounted to a frame. Rather, the mounting structures of GB 2,264,460 are configured to displaceably engage the stencil for easy mounting and removal. Additionally, the mounting structures of GB 2,264,460, as illustrated, *e.g.*, in FIG. 9, only engage the stencil along two edges. Consequently, there are no apparent teachings, suggestions or motivations in Erdmann or in GB 2,264,460 for adapting the stencil to also have apertures along the two edges that are free of apertures in FIG. 9 of GB 2,264,460. And because the Erdmann

stencil apparently is permanently mounted within the frame, there is no apparent motivation in the references for placing apertures along the edges of the Erdmann stencil.

Bubley, on the other hand, discloses an apparatus for tensioning a fabric screen by clamping the screen to mounting bars. However, the fabric screen does not include apertures along its edges, and Applicants do not believe that there is any motivation or suggestion in the prior art for providing apertures in a fabric screen to mount the fabric screen in place of the simple fabric clamping mechanism described in Bubley. In contrast, the stencils of GB 2,264,460 are conventionally formed of, *e.g.*, a “relatively stiff sheet of stainless steel or brass.” Hence, the differences in the nature of the stencil materials in these two references offer different motivations and considerations as to how they can be optimally mounted. Further, there are no apparent teachings or suggestions in Bubley that would motivate one skilled in the art to put apertures along the four edges of the GB 2,264,460 stencil. Nor are there any teachings or suggestions in Bubley that would motivate one skilled in the art to tension the stencil of GB 2,264,460 along two distinct orientations.

Consistent with the requirements mandated by the Federal Circuit in *In re Dembiczak, id.*, 175 F.3d at 1000 (reversing a determination of obviousness where the Board of Patent Appeals and Interferences “did not make particular findings regarding the locus of the suggestion, teaching or motivation to combine the prior art references”), Applicant respectfully requests, if the rejection is to be maintained upon reconsideration, that the Patent Office identify the particular text that serves as the locus of the suggestion, teaching or motivation to combine the prior art references to produce a stencil with apertures along four peripheral edges. In the absence of such findings, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 8, 11, 14 and 19-33 under 35 U.S.C. §103(a).

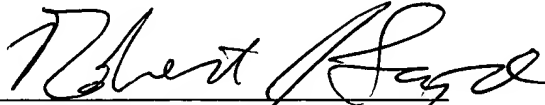
CONCLUSION

On the basis of the foregoing amendments, Applicants respectfully submit that pending claims 8, 11, 14 and 19-33 are in condition for allowance. If there are any questions regarding

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these amendments and remarks, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claim 8 has been amended as follows:

8. (Amended) An apparatus for supporting and tensioning a stencil to enable solder printing of circuit boards and other electronic substrates, comprising:
- a support frame;
 - at least two pairs of opposed mounting members engaged with the support frame, with at least one member in each pair of mounting members being reciprocally displaceable toward the other member of the pair, with each mounting member including one or more projections, and with each reciprocally-displaceable mounting member being biased via a first bias away from the other member of the pair;
 - a mechanism configured to selectively apply a second bias to each biased member to counteract the first bias and displace the biased member toward the other member of the pair; and
 - a stencil comprising a central body having one or more apertures formed through the stencil thickness to define a pattern for printing solder on said substrate, said central body of said stencil defined by four peripheral edges, wherein each of said four peripheral edges of said stencil comprises a plurality of receiving apertures, said receiving apertures configured to receive said projections of each of said mounting members such that when the second bias is not applied, said stencil is tensioned along two axes orientations.